REVERSE LOGISTIC FOR INDUSTRIAL BUILDING SYSTEM CONSTRUCTION PROJECT

MOHANAD KAMIL BUNIYA

UNIVERSITI TEKNOLOGI MALAYSIA

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A project report submitted in partial fulfilment of the
requirements for the award of the degree of
Master of Science (Construction Management)

Faculty of Civil Engineering
Universiti Teknologi Malaysia

AUGUST 2014

ACKNOWLEDGEMENT

All praise is to Allah the Creator of this universe and peace is upon the holy Prophet Muhammad S.A.W. My first and sincere appreciation goes to my family, especially my father, mother, wife, sisters and brothers for always believing in me, for their continuous love, and their supports in all my life. Also I wish to express my sincere appreciation to my thesis supervisor, Associate Professor Dr. Abdul Kadir Bin Marsono for encouragement, guidance, critics, and friendship. Without his continued support and interest, this thesis would not have been the same as presented here. In the end, I want to express my heartfelt gratitude to my friends for their utmost support and motivation throughout this research work. Thanks to all of them.

ABSTRACT

Industrialize Building System (IBS) is a manufacturing best practice that capable to interfere to market the construction. With the right product encouragement from Malaysian government, through its policies and regulations the IBS methods can flourish. However the construction industry players in Malaysia are still not rapidly embracing IBS due to numbers of barriers. Reverse logistic is the process of planning, implementing and controlling flows of raw materials, in process inventory, and finished goods, from a manufacturing, distribution, or use point to a point of recovery or point of proper disposal. The objectives of this study to identify the problems and challenges in reverse logistics and to find solutions to that problems on IBS projects. The data were collected through questionnaires and interviews. The questionnaire was done online and the respondents such as clients, consultants and the contractors, the data from the questionnaires were analyzed using the average index. The study focused on the cost effectiveness of IBS that can affected by the reverse logistic and there many problems can effect on reverse logistic, the reverse logistic can effect on IBS construction project in the form of cost, time and environment sustainability.

ABSTRAK

Sistem Bangunan Industri (IBS) adalah amalan terbaik pembuatan namun masih mampu untuk campur tangan bagi proses pembinaan biasa. Dengan galakan yang aktif daripada kerajaan Malaysia, melalui dasar-dasar dan peraturan-peraturan yang ditetapkan, kaedah IBS boleh aiberluaskan pengsunaannya. Walaubagaimanapun, penggiat industri pembinaan di Malaysia masih tidak pantas mengamalkan IBS kerana beberapa halangan. Logistik Songsang adalah proses merancang, melaksana dan mengawal aliran bahan mentah, seperti dalam inventori proses dan produk siap, bermula dari pembuatan, pengedaran atau penggunaan titik ke titik pemulihan atau pusat pembuangan. Objektif kajian ini untuk mengenal pasti masalah dan cabaran dalam logistik songsang dan untuk mencari penyelesaian kepada masalah yang bagi projek-projek IBS. Data dikumpulkan melalui soal selidik dan temu bual. Soal selidik tersebut dilakukan dalam talian dan responden-responden yang terlibat seperti pelanggan, perunding dan kontraktor. Data daripada soal selidik dianalisis dengan menggunakan indeks purata. Kajian ini memberi tumpuan kepada keberkesanan kos IBS yang boleh terjejas akibat logistik songsang dan terdapat banyak masalah yang boleh memberi kesan ke atas logistik songsang. Logistik songsang boleh memberi kesan ke atas projek pembinaan IBS melalui kos, masa dan persekitaran lestari.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Increasing attention has been given to reverse logistics (RL) and closed loop supply chain (CLSC) markets and business models over the last decade. This is due in part to the recognition of increasing value of the products and technology created in the field at the end of general direct supply chains and the impact of green laws, particularly in Europe. The problem and concerns of the ultimate disposal of junk, trash, and waste has always been an issue as a function of urbanization, and the increasing population density of metropolitan areas. With the industrial revolution, the problems were intensified as a result of the appearance of hazardous waste and materials, environmental impact, and the growing need for control and disposition of human and animal wastes to protect the health and safety of the population. These responsibilities were initially the focus of local and regional governments, and later supplemented by independent businesses providing trash removal and recycling services under contract to government organizations, or for a profit, based on the recoverable value of the trash and waste. However, the last 20 to 30 years have resulted in the creation of an entirely new array of products and goods at the end of the traditional direct supply chain. This has included Products that have failed, but can be repaired or reused. Products that are obsolete, or at the end of leasing life, but

still have value, Unwanted and unsold products on retailer's shelves, Products that have been recalled and Parts and subassemblies created from "pull-and-replace" repair in the field.

Which still have value these products, parts, subassemblies, and materials represent rapidly growing values and economic opportunities at the end of the direct supply chain. They are now the focus of business, industrial, government, commercial, and consumer organizations, looking at the RL process and/or CLSC as a basis for generating real economic value, as well as support of environmental concerns and to reduce the cost of the products. This focus is increasing in all markets including industrial and high tech, commercial, and consumer product areas.

1.2 Problem Statement

The RLRFE (reverse logistic recycling flow equilibrium) problem as a flow equilibrium problem from a system wide policy-making perspective, focusing particularly on equilibrium in situations in which market price and recycling channel flows are coupled interactions and input-output recycled material flows at each agent are not balanced. They propose a three-loop nested diagonalization method in which asymmetric link interactions are gradually relaxed to achieve the equilibrium solution (Kara et al., 2007)

Manufacturers have experienced institutional pressures in the form of market and regulatory demands to conform to the standards dictated by environmental regulations, Manufacturers have experienced institutional pressures in the form of market and regulatory demands to conform to the standards dictated by environmental regulations (Sameer Kumar et al., 2008).

There are pressures on organisations to act responsibly in terms of the protection of the environment and create value for all stakeholders (Nylund, 2012).

There are major barriers and obstacles, which make it difficult to manage reverse logistics efficiently and proactively (Ravi & Shankar, 2005; Zheng, et al., 2005).

One-way strategy for manufacturing systems generating waste that can only be down cycled or discarded into a landfill. In this vision, reducing environmental impacts by eco-efficient ways "creates the illusion of short-term relative improvements" (Young Tilley, 2006).

1.3 Objectives of Study

The objectives to be achieved are as follows:

(i) To identify the problems and challenges in reverse logistics in IBS construction project

(ii) To find solutions to the problems and challenges in reverse logistics in IBS construction project

(iii) The effect of reverse logistic on IBS construction project.

1.4 Scope of the Study

In recent years, the application of supply chain management (SCM) philosophy to the construction industry has been widely investigated as an effective and efficient management measure and strategy to improving the performance of construction. The construction has long suffered from high fragmentation, large waste, poor productivity, cost and time overruns conflicts and disputes.

From a SCM system perspectives can be considered as the coordination of organizations or participants on material flow, information flow and human flow.

- Proposed simulation model in this study can be applied in the planning of IBS projects especially the logistic process of organization work flow and the execution at the IBS construction projects.
- Propose scheme production of catalog system for IBS such as (specification and standardization).
- Propose alternative models of managing organization and to monitor and control the process.
- Optimum work flow process in achieving a good overall IBS project period can be calculated from the proposed model.

1.5 Scope of Study

This study will focus on reverse logistics and not on the conventional forward supply chain practices or processes. The reason for this is that best practices, problems and solutions in reverse logistics may not apply to conventional forward logistics practices. In the previous section it became evident that reverse logistics is

the opposite of logistics. In this study try to find the problems and challenges of reverse logistic and how to overcome this problems then the effect of reverse logistic on IBS construction projects.

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